

A NEW *ATURIA* FROM THE TERTIARY OF SOUTH AUSTRALIA

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Plate xxi.

INTRODUCTION:

THE specimen of *Aturia* described here was obtained during an examination of the Christie's Beach section, Gulf St. Vincent. It was picked up by Mr. J. Eley, and kindly handed to us for examination and identification.

The specimen came from the cliff face at the south end of Christie's Beach, about half a mile north of Port Noarlunga. A detailed stratigraphical examination of this area is being made by one of us (Cotton), but the work is not yet finished. For this reason no definite conclusion is given here as to which particular Marine Stage the Tertiary specimen belongs. It can, however, be pointed out that the specimen came from the glauconitic layer about six feet in thickness, which is overlain by the *Turritella* clays. Beneath the glauconite layer is about ten feet of brown sand. All three layers are tilted gently upwards and rise in a northerly direction. The "*Turritella*," dominant in the clays is the species identified by Cotton and Woods 1935, as *Colpospira aldingae* Tate 1882, regarded as a Janjukian species. There are minor differences in the stratigraphy of the Aldinga section and that at Christie's Beach so that these details of stratigraphy are recorded. Larger specimens of this *Aturia* have been taken in this area, but the exact locality of the species here described is known so that it is deemed safer to select this specimen as holotype.

ATURIA CLARKEI ATTENUATA subsp. nov.

Description: Internal mould of a phragmocone, discoidal, involute. Whorls deeply depressed dorsally. Flanks of last whorl diverge at an angle of 30° and have a very shallow depressed zone near the ventrolateral shoulder. The centre of the lateral depression on the flanks lies on the umbilical side of the lateral lobe. Greatest diameter of specimen is 62.8 mm., width 32.0 mm., height of last preserved whorl 41.0 mm., height of that whorl above impressed zone 25.5 mm. The ratio of width to diameter of the phragmocone is 0.51, that of width to height of last whorl 0.78.

The siphuncle is of average size; its diameter at the adoral end of the specimen is 3.5 mm. It is encased in a solid tube formed of septal funnels which are in contact with the dorsal wall of the cone. The central portions of the septa are evenly, though not very strongly, concave. In the median cross-

section they swing backward in an even curve from the septal foramen. They are set well apart so that successive sutures never touch.

The external suture forms one broad lateral saddle on each flank. The umbilical limb of this saddle rises in an even curve from the umbilicus and reaches the point of culmination slightly before the middle of the flank is reached. It crosses the middle of the flank in a broad sweep and then curves down somewhat suddenly and passes into the steep, somewhat bulging dorsal limb of the lateral lobe. This lobe is long, acute and somewhat drawn out at the apex. Its ventral limb rises steeply, following approximately parallel to the curvature of the ventral side of the conch. It rises to little more than two-thirds of the height of the lateral saddle. The suture then curves abruptly ventrad and slightly backward and crosses the venter almost perfectly straight. The distance of the lateral lobe from the ventral side of the shell is about one-third the height of the whorl.

Comparisons: This form resembles *Aturia clarkei* in the following features:

1. Shape of lateral lobe and saddle of the suture.
2. Median section of septa which bend backward (adapical) from the septal foramen and are not sickle-shaped as in *A. australis*.
3. Angle of divergence of flanks of whorls (30°).

It resembles *Aturia australis* mainly in the general proportions of the shell, particularly the comparatively narrowly rounded venter, and slight depression along a ventrolateral zone.

An important difference between the two species is absolute size, *A. clarkei* being the larger form, but no estimate of the original size of the present specimen can be made.

As far as can be told the specimen is intermediate between the two species, but resembles *A. clarkei* more closely in taxonomically important features connected with the structure of the septa and the shape of the sutures.

It seems possible that intergradation existed between the eastern species (*A. australis*) and the western species (*A. clarkei*). Typical *A. australis* extends westward as far as Mount Gambier in South Australia. Typical *A. clarkei* has not yet been found east of the Bremer River in Western Australia. Miocene sediments are widespread in the intervening area, where intermediate types such as the one here described may be expected to exist.

Holotype, Reg. No. P.9027, S.A. Mus.

CONCLUSION.

On the available evidence it seems advisable to regard the Aldinga specimen as representative of a local variety of the Western Australian species.